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I manage 1653#



Express Mail No. EL 964151161 US

Deposited on: November 14, 2003

DUNLAP, CODDING & ROGERS, P.C.

PTO/SB/21 (08-00)

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U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	09/879,959
Filing Date	06/13/2001
First Named Inventor	Paul H. Weigel, et al.
Group Art Unit	1653
Examiner Name	G. Bugaisky
Attorney Docket Number	35541.049

Total Number of Pages in This Submission

ENCLOSURES (check all that apply)

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> Fee Transmittal Form
<input type="checkbox"/> Fee Attached
<input type="checkbox"/> Amendment / Reply
<input type="checkbox"/> After Final
<input type="checkbox"/> Affidavits/declaration(s)
<input type="checkbox"/> Extension of Time Request
<input type="checkbox"/> Express Abandonment Request
<input checked="" type="checkbox"/> Information Disclosure Statement
<input type="checkbox"/> Certified Copy of Priority Document(s)
<input type="checkbox"/> Response to Missing Parts/ Incomplete Application
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Assignment Papers (for an Application)
<input type="checkbox"/> Drawing(s)
<input type="checkbox"/> Licensing-related Papers
<input type="checkbox"/> Petition
<input type="checkbox"/> Petition to Convert to a Provisional Application
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<input type="checkbox"/> CD, Number of CD(s) _____ | <input type="checkbox"/> After Allowance Communication to Group
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<input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Status Letter
<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
See remarks below: |
|--|---|---|
- Remarks
1. Transmittal Form (1 page);
2. Fee Transmittal Form (1 page);
3. Information Disclosure Statement (6 pages);
4. Information Disclosure Statement by Applicant (6 pages);
5. Copies of Cited Art; and
6. Return Receipt Post Card.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	DUNLAP, CODDING & ROGERS, P.C., Customer Number 30589 Attn: Douglas J. Sorocco, P. O. Box 16370, Oklahoma City, Oklahoma 73113
Signature	
Date	11.14.03

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail or U.S. Express mail no. EL 964151161 US in an envelope addressed to the address below on this date: November 14, 2003

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Date Deposited:

11/14/2003

PTO/SB/17 (10-02)

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DUNLAP, CODDING & ROGERS, P.C. U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

FEE TRANSMITTAL

for FY 2003

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT

(\$ 180

Complete if Known

Application Number	09/879.959
Filing Date	06/13/2001
First Named Inventor	Paul H. Weigel, et al.
Examiner Name	G. Bugaisky
Art Unit	1653
Attorney Docket No.	35541.049

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money Order ☐ None

☒ Deposit Account:

 Deposit
Account
Number
Deposit
Account
Name

04-1700

 Dunlap, Coddling & Rogers, P.C.
Customer No. 30589

The Commissioner is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments

☒ Charge any additional fee(s) during the pendency of this application

☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					(\$ 0

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims		Fee from below		Fee Paid	
Total Claims		-	** =		X		= \$0
Independent Claims		-	** =		X		= \$0
Multiple Dependent		-	** =		X		= \$0

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1202	18	2202	9	Claims in excess of 20	
1201	86	2201	43	Independent claims in excess of 3	
1203	290	2203	145	Multiple dependent claim, if not paid	
1204	86	2204	43	** Reissue independent claims over original patent	
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2)					(\$ 0

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	180
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 180

SUBMITTED BY

(Complete if applicable)

Name (Print/Type)

Douglas J. Sorocco

Registration No.
(Attorney/Agent)

43,145

Telephone

(405) 607-8600

Signature

Date

11/14/2003

Commissioner for Patents

PO Box 1450, Alexandria, VA 22313-1450

SEND TO:

EXPRESS MAIL NO.: EL 964151161 US
DATE DEPOSITED: November 14, 2003

PATENT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Paul H. Weigel, et al.

Atty. Dkt. No. 35541.049

Serial No.: 09/879,959

Art Unit: 1653

Filed: June 13, 2001

Examiner: G. Bugaisky

For: STREPTOCOCCUS EQUISIMILIS
HYALURONAN SYNTHASE GENE
AND EXPRESSION THEREOF
IN BACILLUS SUBTILIS

Confirmation No. 6465

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

List of Sections Forming Part of This Information Disclosure Statement

The following sections are being submitted for this Information Disclosure Statement:

1. ☒ Preliminary Statements
2. ☒ Forms PTO/SB/08A and 08B (formerly Form PTO-1449)
3. ☒ Statement as to Information Not Found in Patents or Publications
4. ☐ Identification of Prior Application in Which Listed Information Was Already Cited and for Which No Copies Are Submitted or Need Be Submitted
5. ☐ Cumulative Patents or Publications

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- 6. ☒ Copies of Listed Information Items Accompanying this Statement
- 7. ☐ Concise Explanation of Non-English Language Listed Information Items
 - 7A. ☐ EPO Search Report
 - 7B. ☐ English Language Version
- 8. ☐ Translation(s) of Non-English Language Documents
- 9. ☐ Concise Explanation of English Language Listed Information Items (Optional)
- 10. ☒ Identification of Person(s) Making this Information Disclosure Statement

Section 1. Preliminary Statements

Applicants submit herewith patents, publications or other information of which they are aware, which they believe may be material to the examination of this application and in respect of which there may be a duty to disclose.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made (37 C.F.R. § 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability or that no other material information exists.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

Section 2. Forms PTO/SB/08A and 08B (formerly Form PTO-1449)

- ☒ A completed Form PTO/SB/08A and/or Form PTO/SB/08B is attached hereto.

Section 3. Statement as to Information Not Found in Patents or Publications (Information Not Listed in Form PTO-1449)

The present invention relates to a DNA sequence encoding hyaluronan synthase from *Pasturella multocida*. More particularly, the present invention relates to a DNA sequence encoding hyaluronan synthase from *Pasturella multocida* which is capable of being placed into a recombinant construct so as to be able to express hyaluronan synthase in a foreign host. The present invention also relates to methods of using a DNA sequence encoding hyaluronan synthase from *Pasturella multocida* to (1) make hyaluronan polymers of varying size distribution; (2) make hyaluronan polymers incorporating substitute or additional base sugars; (3) develop new and novel animal vaccines; and (4) develop new and novel diagnostic tests for the detection and identification of animal pathogens.

Section 4. Identification of Prior Application in Which Listed Information Was Already Cited and for Which No Copies Are Submitted or Need Be Submitted

This application relies, under 35 U.S.C. § 120, on the earlier filing date of prior application Serial No. _____, filed on _____ (date).

(complete the following, if applicable)

[] This application also relies, under 35 U.S.C. 120, on the earlier filing date of prior application Serial No. _____, filed on _____ (date).

The following references were submitted to, and/or cited by, the Office in the prior application(s) and therefore, are not required to be provided in this application:

Section 5. Cumulative Patents or Publications

STATEMENT

_____ is cumulative of the following patents or publications listed on Form PTO-1449:

In accordance with 37 C.F.R. § 1.98(c), a copy of only _____ is being submitted with this Information Disclosure Statement.

Section 6. Copies of Listed Information Items Accompanying this Statement

Legible copies of all items listed in Form PTO-1449 (Modified) accompany this information disclosure statement.

☐ Exception(s) to above:

☐ Items in prior application from which an earlier filing date is claimed for this application, as identified in Section 4.

☐ Cumulative patents or publications identified in Section 5.

Section 7. Concise Explanation of Non-English Language Listed Information Items

Section 7A. Concise Explanation of Non-English Language Listed Information Items - EPO Search Report

The relevance with respect to the following citations listed on Form PTO-1449:

is submitted on the basis of accompanying:

(check the appropriate item)

☐ EPO search report that is in the English language,

☐ EPO search report that is not in the English language and that is accompanied also by an English language version of the EPO search report,

that issued on the corresponding European patent application.

Section 7B. Concise Explanation of Non-English Language Listed Information Items - English Language Version of EPO Search Report

Section 8. Translation(s) of Non-English Language Documents

- ☐ Submitted herewith is an English translation of the following foreign language patents, publications or information or of those portions of those patents, publications or information considered to be material:

(complete the following, if applicable)

- ☐ No English language translations of the foreign language parents, publications or information or parts thereof are readily available, except for those listed above.
- ☐ The following foreign language documents submitted are believed to be the equivalent or substantial equivalent of the English language documents identified below, which are also submitted herewith.

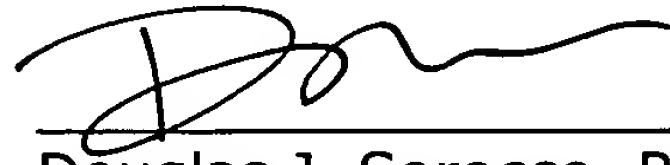
Section 9. Concise Explanation of English Language Listed Information Items (OPTIONAL)

Section 10. Identification of Person(s) Making this INFORMATION DISCLOSURE STATEMENT

The person making this statement is the agent/attorney who signs below on the basis of the information:

- ☐ supplied by the inventor(s)
- ☐ supplied by an individual associated with the filing and prosecution of this application (37 C.F.R. § 1.56(c)).
- ☒ in the agent/attorney's file

Respectfully submitted,



Douglas J. Sorocco, Reg. No. 43,145
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Attorney for Applicants

Express Mail: EL 964151161 US
Date Deposited: 11/14/2003

PTO/SB/08A (08-00)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE



Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 6

Completion if Known

Application Number	09/879,959
Filing Date	06/13/2001
First Named Inventor	Paul H. Weigel, et al.
Group Art Unit	1653
Examiner Name	G. Bugaisky
Attorney Docket Number	35541.049

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	1	4169886		Hertman et al.	10/02/1979	
	2	4224179		Schneider	09/23/1980	
	3	4235871		Papahadjopoulos, et al.	11/25/1980	
	4	4511478		Nowinski, et al.	04/16/1985	
	5	4517295		Bracke, et al.	05/14/1985	
	6	4615697		Robinson	10/07/1986	
	7	4708861		Popescu, et al.	11/24/1987	
	8	4780414		Nimrod, et al.	10/25/1988	
	9	4782046		Brown, et al.	11/01/1988	
	10	4784990		Nimrod, et al.	11/15/1988	
	11	4801539		Akasaka, et al.	01/31/1989	
	12	4822867		Erhan	04/18/1989	
	13	4885244		Miyamori et al.	12/05/1989	
	14	4983392		Robinson	01/08/1991	
	15	5015577		Weigel, et al.	05/14/1991	
	16	5023175		Hosoya, et al.	06/11/1991	
	17	5071751		Morita, et al.	10/12/1991	
	18	5171689		Kawaguri, et al.	12/15/1992	
	19	5217743		Farah	06/08/1993	
	20	5337747		Neftel	08/16/1994	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
	A		0036776 EPO		Kleid, et al.	05/11/1988		
	B		0144019 EPO		Brown, et al.	06/13/1990		
	C		0195303 EPO		Grandi, et al.	11/08/1989		
	D		0244757 EPO		Hosoya, et al.	11/09/1994		
	E		0266578 EPO		Miyamori, et al.	07/07/1993		
	F		91/03559 WO		Weigel, et al.	03/21/1991		
	G		94/00463 WO		Prehm, et al.	01/06/1994		
	H		95/24497 WO		Lansing, et al.	09/14/1995		
	I		95/33067 WO		Stohl, Sten	12/07/1995		
	J		97/20061 WO		Wong, et al.	06/05/1997		

Examiner
Signature

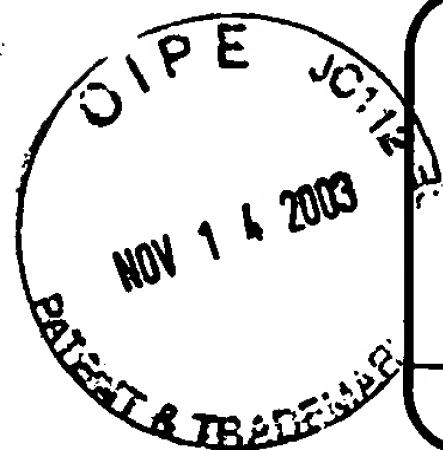
Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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PTO/SB/08A (08-00)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE



Complete if Known

Application Number	09/879,959
Filing Date	06/13/2001
First Named Inventor	Paul H. Weigel, et al.
Group Art Unit	1653
Examiner Name	G. Bugaisky
Attorney Docket Number	35541.049

(use as many sheets as necessary)

Sheet 2 of 6

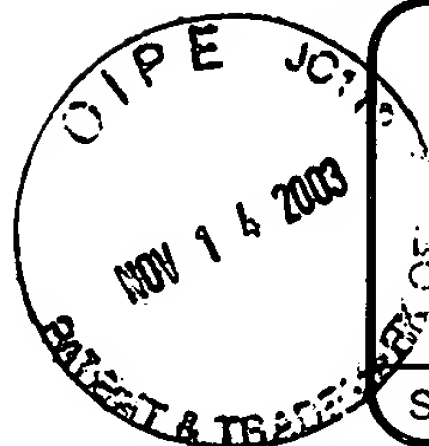
[illegible][illegible]Date
Considered

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 3 of 6

Compleat if Known

Application Number	09/879,959
Filing Date	06/13/2001
First Named Inventor	Paul H. Weigel, et al.
Group Art Unit	1653
Examiner Name	G. Bugaisky
Attorney Docket Number	35541.049

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	AA	"THE PRODUCTION OF CAPSULES, HYALURONIC ACID AND HYALURONIDASE BY GROUP A AND GROUP C STREPTOCOCCI", MacLennan, J. Gen. Microbiol., 14:134-142 (1956).	
	BB	"THE ISOLATION AND CHARACTERIZATION OF A HYALURONIDASE PRODUCED BY A CAPSULATED STRAIN OF GROUP C STREPTOCOCCUS", MacLennan, J. Gen. Microbiol., 14:143-152 (1956).	
	CC	"THE BIOSYNTHESIS OF HYALURONIC ACID BY GROUP A STREPTOCOCCUS", Markovitz et al., J. Biol. Chem., 234 (9):2343-2350 (1959).	
	DD	"THE BIOSYNTHESIS OF HYALURONIC ACID BY STREPTOCOCCUS," Stoolmiller, et al., Journal of Biological Chemistry, Vol. 244, No. 2, pp. 236-246 (1969).	
	EE	"THE ISOLATION AND CHARACTERIZATION OF HYALURONIC ACID FROM PASTEURELLA MULTOCIDA", Cifonelli, et al., Carbohydrate Research, 14, 272-276, (1970).	
	FF	"BIOSYNTHESIS OF HYALURONIC ACID BY STREPTOCOCCUS", Sugahara et al., J. Biol. Chem., 254:6252-6261 (1979).	
	GG	"MODERN GENETICS," Ayala, et al., Benjamin/Cummings Publishing Col., Menlo Park CA, p. 45 (1980).	
	HH	"HYALURONIDASE PRODUCTION BY TYPE B PASTEURELLA MULTOCIDA FROM CASES OF HEMORRHAGIC SEPTICEMIA", Carter, et al., Journal of Clinical Microbiology, p. 94-96, (1980).	
	II	"STRAINS OF ESCHERICHIA COLI CARRYING THE STRUCTURAL GENE FOR HISTIDYL-tRNA SYNTHETASE ON A HIGH COPY-NUMBER PLASMID," Eisenbeis, et al., Mol. Gen. Genet. 183:115-122 (1981).	
	JJ	"SYNTHESIS OF HYALURONATE IN DIFFERENTIATED TERATOCARCINOMA CELLS," Prehm, et al., J. Biochem, Vol. 211, pp. 181-189 (1983).	
	KK	"STREPTOCOCCAL HYALURONIC ACID: PROPOSED MECHANISMS OF DEGRADATION AND LOSS OF SYNTHESIS DURING STATIONARY PHASE", Van de Rijn, J. Bacteriol., 156(3):1059-1065 (1983).	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Commissioner for Patents
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 4 of 6

Complete if Known

Application Number	09/879,959
Filing Date	06/13/2001
First Named Inventor	Paul H. Weigel, et al.
Group Art Unit	1653
Examiner Name	G. Bugaisky
Attorney Docket Number	35541.049

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials ²	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	LL	"SOLUBILIZATION OF HYALURONIC ACID SYNTHETIC ACTIVITY FROM STREPTOCOCCI AND ITS ACTIVATION WITH PHOSPHOLIPIDS", Triscott et al., J. Biol. Chem., 261(13):6004-6009 (1986).	
	MM	"ISOLATION OF STREPTOCOCCAL HYALURONATE SYNTHASE", Prehm et al., Biochem. J., 235:887-889 (1986).	
	NN	"ISOLATION, STRUCTURE AND EXPRESSION OF MAMMALIAN GENES FOR HISTIDYL-tRNA SYNTHETASE," Tsui, et al., Nucleic Acids Research, Vol. 15, No. 8, pp. 3349-3367, (1987).	
	OO	"SHUTTLE VECTORS CONTAINING A MULTIPLE CLONING SITE AND A LACZA GENA FOR CONJUGAL TRANSFER OF DNA FROM ESCHERICHIA COLI TO GRAM-POSITIVE BACTERIA," Trieu-Cout, et al., Gene, Vol. 102, pp. 99-104, (1991).	
	PP	"ANALYSIS OF THE STREPTOCOCCAL HYALURONIC ACID SYNTHASE COMPLEX USING THE PHOTOAFFINITY PROBE 5-AZIDO-UDP-GLUCURONIC ACID," Van de Rijn, et al., J. Biol. Chem., Vol. 267, No. 34, pp. 24302-24306, (1992).	
	QQ	"MOLECULAR CHARACTERIZATION OF A LOCUS REQUIRED FOR HYALURONIC ACID CAPSULE PRODUCTION IN GROUP A STREPTOCOCCI," Dougherty, et al., J. Exp. Med., Vol. 175, pp. 1291-1299, (1992).	
	RR	"HYALURONAN," Laurent, et al., FASEB Journal, Vol. 6, pp. 2397-2404, (1992).	
	SS	"HYALURONIC ACID AND A (1-4)-B-D-XYLAN, EXTRACELLULAR POLYSACCHARIDES OF PASTEURELLA MULTOCIDA (CARTER TYPE A) STRAIN 880", Rosner, et al., Carbohydrate Research, 223, 329-333 (1992).	
	TT	"ISOLATION OF A STREPTOCOCCUS PYOGENES GENE LOCUS THAT DIRECTS HYALURONAN BIOSYNTHESIS IN ACAPSULAR MUTANTS AND IN HETEROLOGOUS BACTERIA," DeAngelis, et al., J. Biol. Chem., Vol. 268, No. 20, pp. 14568-14571, (1993).	
	UU	"HYALURONATE SYNTHASE: CLONING AND SEQUENCING OF THE GENE FROM STREPTOCOCCUS SP.," Lansing, et al., J. Biochem., Vol. 289, pp. 179-184, (1993).	
	VV	"MOLECULAR CHARACTERIZATION OF HASB FROM AN OPERON REQUIRED FOR HYALURONIC ACID SYNTHESIS IN GROUP A STREPTOCOCCI," Dougherty, et al., J. Biol. Chem., Vol. 268, No. 10, pp. 7118-7124, (1993).	

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Sheet 5 of 6

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Application Number	09/879,959
Filing Date	06/13/2001
First Named Inventor	Paul H. Weigel, et al.
Group Art Unit	1653
Examiner Name	G. Bugaisky
Attorney Docket Number	35541.049

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	WW	"MOLECULAR CLONING, IDENTIFICATION, AND SEQUENCE OF THE HYALURONAN SYNTHASE GENE FROM GROUP A STREPTOCOCCUS PYOGENES," DeAngelis, et al., J. Biol. Chem., Vol. 268, No. 26, pp. 19181-19184, (1993).	
	XX	"CAPSULAR HYALURONIC ACID IN PASTEURELLA MULTOCIDA TYPE A AND ITS COUNTERPART IN TYPE D", Pandit, Research in Veterinary Science 54, 20-24 (1993).	
	YY	"MOLECULAR CHARACTERIZATION OF HASA FROM AN OPERON REQUIRED FOR HYALURONIC ACID SYNTHESIS IN GROUP A STREPTOCOCCI," Dougherty, et al., J. Biol. Chem., Vol. 269, No. 1, pp. 169-175,	
	ZZ	"THE STREPTOCOCCUS PYOGENES HYALURONAN SYTNHASE: SEQUENCE COMPARISON AND CONSERVATION AMONG VARIOUS GROUP A STRAINS," DeAngelis, et al., Biochem. and Biophy. Res. Comm., Vol. 199, No. 1, pp. 1-10, (1994).	
	aa	"HYALURONIDASE AND CHONDROITINASE ACTIVITY OF PASTEURELLA MULTOCIDA SEROTYPE B:2 INVOLVED IN HAEMORRHAGIC SEPTICAEMIA", Rimler, et al., Veterinary Record 134, 67-68 (1994).	
	bb	"MOLECULAR FINGERPRINTING OF PASTEURELLA MULTOCIDA ASSOCIATED WITH PROGRESSIVE ATROPHIC RHINITIS IN SWINE HERDS". Gardner et al. Database Medline on Dialog, US Nat'l. Library of Medicine (Bethesda, MD, USA) No. 95161494, Abstract, J. Vet. Diagn. Invest. Oct. 1994. Vol. 6, No. 4 pages	
	cc	"THE ELUCIDATION OF NOVEL CAPSULAR GENOTYPES OF HAEMOPHILUS INFLUENZAE TYPE B WITH THE POLYMERASE CHAIN REACTION. Leaves et al. J. Medical Microbiology. 1995, Vol. 43, pages 120-124, entire document.	
	dd	"CAPSULAR HYALURONIC ACID-MEDIATED ADHESION OF PASTEURELLA MULTOCIDA TO TURKEY AIR SAC MACROPHAGES", Pruiomboom, et al., Avian Diseases 40:887-893, (1996).	
	ee	"HOMOLOGS OF THE XENOPUS DEVELOPMENTAL GENE DG42 ARE PRESENT IN ZEBRAFISH AND MOUSE AND ARE INVOLVED IN THE SYNTHESIS OF NOD-LIKE CHITIN OLIGOSACCHARIDES DURING EARLY EMBRYOGENESIS", Semino et al., Proc. Natl Acad. Sci. USA, 93:4548-4553 (1996).	
	ff	"ENZYMOLOGICAL CHARACTERIZATION OF THE PASTEURELLA MULTOCIDA HYALURONIC ACID SYNTHASE", DeAngelis, Biochemistry, 35 (30): 9768-9771 (1996).	
	gg	"CONSTRUCTION AND CHARACTERIZATION OF A POTENTIAL LIVE ORAL CARRIER-BASED VACCINE AGAINST VIBRIO CHOLERAEE". Favre et al. Infection and Immunity. September 1996. Vol. 64, No. 9 pagres 3565-3570, entire document.	

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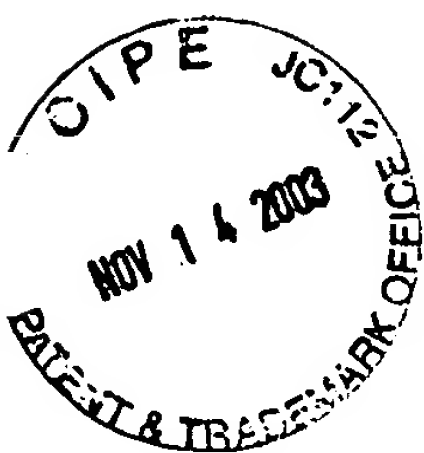
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	hh	"MOLECULAR CLONING, EXPRESSION, AND CHARACTERIZATION OF THE AUTHENTIC HYALURONAN SYNTHASE FROM GROUP C STREPTOCOCCUS EQUISIMILIS", Kumari and Weigel, J. Biol. Chem., 272(51): 32539-32546 (1997).	
	ii	"HYALURONAN SYNTHASES", Weigel et al., J. Biol. Chem., 272 (22): 13997-14000 (1997).	
	jj	"IDENTIFICATION AND MOLECULAR CLONING OF A UNIQUE HYALURONAN SYNTHASE FROM PASTEURELLA MULTOCIDA", DeAngelis et al., J. Biol. Chem., 273(14): 8454-8458 (1998).	
	kk	"THE CAPSULE BIOSYNTHETIC LOCUS OF PASTEURELLA MULTOCIDA A:1", Chung, et al. FEMS Microbiol. Lett. 15 September 1998, Vol. 166, No. 2, pages 289-296, entire document.	
	ll	"TRANSPOSON Tn916 INSERTIONAL MUTAGENESIS OF PASTEURELLA MULTOCIDA AND DIRECT SEQUENCING OF DISRUPTION SITE", Paul L. DeAngelis, Microbial Pathogenesis, 24: 203-209 (1998).	

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